

Amendments to the Claims:

This listing of claims will replace the prior version and listing of claims in the application filed on November 19, 2003:

Claims 1-20 (canceled)

Claim 21 (New): An apparatus for recovering fluids from a well located in the floor of a body of water, said apparatus comprising:

- (a) a substantially vertical fluid separator having
 - 5 (1) a nominal vertical dimension larger than a nominal horizontal dimension and (2) a multiphase fluid inlet located in its upper portion, said fluid separator located below the surface and entirely above the floor of said body of water;
- (b) a rigid riser assembly extending substantially
 - 10 vertically from the top portion of said fluid separator to a location near the surface of said body of water;
- (c) a gas outlet located in the upper portion of said fluid separator and fluidly connected to said riser assembly;
- 15 (d) a liquid outlet located in the lower portion of said fluid separator; and
- (e) a pump fluidly connected to said liquid outlet and located outside of said fluid separator; wherein said pump is capable of regulating the gas/liquid interface level in
 - 20 said fluid separator.

Claim 22 (New): The apparatus of claim 21 wherein said fluid separator is located at a depth of at least about 1,500 feet below the surface of said body of water.

Claim 23 (New): The apparatus of claim 21 wherein said fluid separator is capable of operating at an internal pressure of no more than about half of the external pressure

on said separator.

Claim 24 (New): The apparatus of claim 21 wherein said pump is hydraulically-driven.

Claim 25 (New): The apparatus of claim 21 wherein said riser assembly comprises two sets of interconnected tubular sections that are concentric with one another, said gas outlet is fluidly connected to one set of said concentric
5 tubular sections, and the outlet from said pump is fluidly connected to the other set of said concentric tubular sections.

Claim 26 (New): The apparatus of claim 21 wherein said riser assembly and said fluid separator are composed of tubular sections and said fluid separator has a nominal diameter of no more than about 36 inches.

Claim 27 (New): The apparatus of claim 26 wherein said riser assembly has nominal diameter between about 12 and about 16 inches.

Claim 28 (New): The apparatus of claim 27 wherein said fluid separator has a vertical height of about at least 50 feet.

Claim 29 (New): The apparatus of claim 23 wherein said fluid separator is capable of operating at an internal pressure of 500 psi or less.

Claim 30 (New): The apparatus of claim 21 wherein the operational speed of said pump is at least in part controlled by the level of the gas/liquid interface within said fluid separator.

Claim 31 (New): The apparatus of claim 21 wherein said fluid separator has a nominal vertical dimension of at least about 30 feet and a nominal horizontal dimension of no more than about 4 feet.

Claim 32 (New): The apparatus of claim 21 wherein said pump is capable of operating with a gas/liquid interface level within said separator that can vary at least about 30 feet along the nominal vertical dimension of said separator.

Claim 33 (New): The apparatus of Claim 26 wherein said fluid separator comprises widened sections of said riser assembly.

Claim 34 (New): An offshore apparatus located below the surface of a body of water for separating gas and liquids exiting a well in the floor of said body of water, said apparatus comprising:

5 (a) a substantially vertical fluid separator fluidly connected to said well;

(b) a substantially vertical tubular assembly fluidly connected to an upper fluid outlet of said fluid separator, said tubular assembly capable of transmitting gas
10 separated from liquid in said fluid separator to the surface of said body of water;

(c) a pump fluidly connected to a lower fluid outlet of said fluid separator and capable of transmitting liquid separated from gas in said separator to the surface
15 of said body of water; and

(d) pump operating controls capable of controlling the speed of said pump such that the gas/liquid interface level within said fluid separator can vary at least about 30 feet along the vertical height of said separator.

20

Claim 35 (New): The apparatus of claim 34 wherein tools are capable of being lowered through said fluid separator and said tubular assembly.

Claim 36 (New): The apparatus of claim 34 wherein the height of said vertical separator is capable of allowing said gas/liquid interface level to vary with changes in well conditions for a period of at least about 20 seconds until
5 said pump responds to corresponding changes in the height of said interface level in said fluid separator.

Claim 37 (New): The apparatus of claim 34 wherein said pump has a discharge conduit extending substantially vertically from said pump to near the surface of said body of water.

Claim 38 (New): The apparatus of Claim 34 wherein the height of said fluid separator is at least about 50 feet.

Claim 39 (New): A process for recovering fluids from a well located in the floor of a body of water, said process comprising:

- 5 (a) passing the multiphase effluent from said well into a substantially vertical fluid separator wherein gas in said multiphase fluid separates from the liquid in said fluid, said separator located below the surface and entirely above the floor of said body of water and having a nominal vertical dimension larger than a nominal horizontal dimension;
- 10 (b) passing said separated gas upwardly to near the surface of said body of water through a substantially vertical rigid, riser pipe fluidly connected to the top portion of said fluid separator;
- (c) passing the liquid separated from said
15 multiphase fluid in said separator to a pump; and
- (d) pumping said liquid to near the surface of said body of water through a substantially vertical pipe while controlling the location of the gas/liquid interface in said vertical separator.

Claim 40 (New): The process of claim 39 further comprising:

(e) determining the gas/liquid interface level in said vertical separator; and

(f) controlling the operational speed of said pump using at least in part said determined interface level.